



MARSHALL STAR

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May 29, 2008

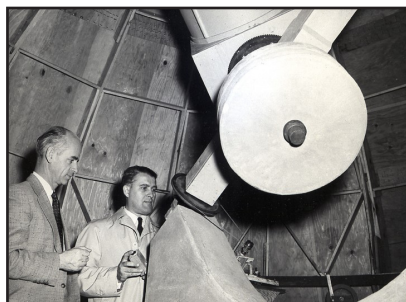
Space program pioneer Ernst Stuhlinger dies

By Mike Wright

"To keep our own planet in a livable state, even from that standpoint, it will be very important to do space research and to develop a space program further and further," once remarked Dr. Ernst Stuhlinger.

Stuhlinger was a world-renowned space scientist who began work in Germany in the 1930s and retired as associate director for science at the Marshall Center on Dec. 28, 1975. He passed away on Sunday, May 25 in Huntsville.

"The Marshall family is deeply saddened by the passing of Dr. Ernst Stuhlinger," said Marshall Space Flight Center Director David King. "He was a brilliant scientist and a true pioneer of space exploration. We are grateful for his many significant contributions to our nation's space program. His memory and legacy will continue to live through NASA's efforts to expand



Ernst Stuhlinger, left, and Wernher von Braun at the Observatory of the Rocket City Astronomical Association in Huntsville in 1956.

See Stuhlinger on page 4

NASA's Phoenix spacecraft lands at Martian arctic site; camera on Mars orbiter snaps photos during landing

NASA news release

A telescopic camera in orbit around Mars caught a view of NASA's Phoenix Mars Lander suspended from its parachute during the lander's successful arrival at Mars on May 25.

The image from the High Resolution Imaging Science Experiment, or HiRISE, on NASA's Mars Reconnaissance Orbiter marks the first time ever one spacecraft has photographed another one in the act of landing on Mars.

Meanwhile, scientists pored over initial images from Phoenix, the first ever taken from the surface of Mars' polar regions. Phoenix returned information that it was in good health after its first night on Mars, and the Phoenix team sent the spacecraft its to-do list for the day.

"We can see cracks in the troughs that make us think the ice is still modifying the surface," said Phoenix Principal Investigator Peter Smith of the University of Arizona, Tucson. "We see fresh cracks. Cracks can't be old. They would fill in."

Camera pointing for the image from HiRISE used navigational

See Phoenix on page 2

Discovery scheduled to fly Saturday

Space shuttle Discovery is on Launch Pad 39A at NASA's Kennedy Space Center, Fla., where final launch preparations continue. Scheduled liftoff of Discovery is May 31 at 4:02 p.m.

CDT. Discovery's 14-day mission will carry the largest-ever payload to the International Space Station and includes three spacewalks. It is the second of three missions that will launch components to complete the Japan Aerospace Exploration Agency's Kibo laboratory.

The crew will install Kibo's large Japanese Pressurized Module and Kibo's robotic arm system.



NASA/KSC

GLAST ready to take off

By Jennifer Morcone and combined reports

NASA's Gamma-ray Large Area Space Telescope, or GLAST, is undergoing final preparations for launch at the Cape Canaveral Air Force Station, near the beaches of eastern central Florida. The spacecraft is targeted for launch aboard a Delta II rocket on June 3. The launch window runs from 12:45 a.m. to 2:40 p.m. CDT.

"Like expectant parents, we're eager to see our baby delivered," said Charles "Chip" Meegan, an astrophysicist at the Marshall Center and GLAST Burst Monitor principal investigator. "The attitude among the team is positive. We're excited, and a bit anxious, but we're ready for action and really looking forward to seeing science data begin streaming in."

GLAST is a powerful space observatory that will explore the most extreme environments in the universe, where nature harnesses energies far beyond anything possible on Earth. GLAST will search for signs of new laws of physics and what composes the mysterious dark matter, explain how black holes accelerate immense jets of

material to nearly light speed, and help crack the mysteries of the stupendously powerful explosions known as gamma-ray bursts.

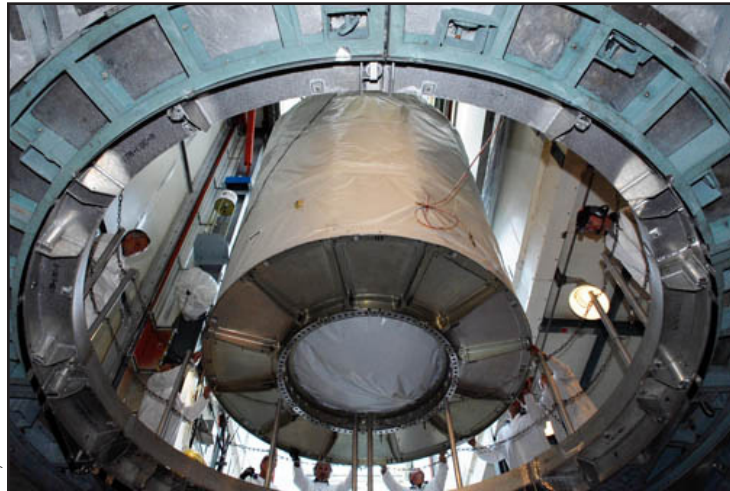
The GLAST Burst Monitor, or GBM, a space-based instrument for studying gamma ray bursts, is one of two instruments on NASA's GLAST spacecraft. Together, the Large Area Telescope and the GBM will observe gamma rays ranging in energy from a few

thousand electron volts to many hundreds of billions of electron volts or higher, the widest range of coverage ever available on a single spacecraft for gamma ray studies.

Marshall manages the GLAST Burst Monitor and development of the instrument was a collaborative effort between the National Space Science and Technology Center in the United States and the Max Planck Institute for Extraterrestrial Physics in Germany.

NASA's GLAST mission is an astrophysics and particle physics partnership, developed in collaboration with the U.S. Department of Energy, along with important contributions from academic institutions and partners in France, Germany, Italy, Japan, Sweden and the United States.

Morcone is a member of the Public & Employee Communications Office in the Office of Strategic Analysis & Communications.



NASA/Kim Shiflett

At Launch Pad 17-B at Cape Canaveral Air Force Station in Florida, workers lower the GLAST spacecraft into the opening above the Delta II rocket's second stage in the mobile service tower.

Phoenix

Continued from page 1

information about Phoenix updated on landing day. The camera team and Phoenix team would not know until the image was sent to Earth whether it had actually caught Phoenix.

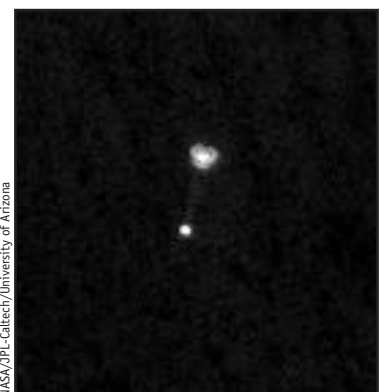
"We saw a few other bright spots in the image first, but when we saw the parachute and the lander with the cords connecting them, there was no question," said HiRISE Principal Investigator Alfred McEwen, also of the University of Arizona.

"I'm floored. I'm absolutely floored," said Phoenix Project Manager Barry Goldstein of NASA's Jet Propulsion Laboratory, Pasadena, Calif. A team analyzing what can be learned from the Phoenix descent through the Martian atmosphere will use the image to reconstruct events.

HiRISE usually points downward. For this image, the pointing was at 62 degrees, nearly two-thirds of the way from straight down to horizontal. To tilt the camera, the whole orbiter must tilt. Mars Reconnaissance Orbiter was already pointed toward the expected descent path of Phoenix to record radio transmissions from Phoenix.

McEwen said, "We've never taken an image at such an oblique angle before."

The Phoenix mission is led by Smith at the University of Arizona with project management at Jet Propulsion Laboratory and development partnership at Lockheed Martin, Denver. International contributions come from the Canadian Space Agency; the University of Neuchatel, Switzerland; the universities of Copenhagen and Aarhus, Denmark; Max Planck Institute, Germany; and the Finnish Meteorological Institute. For more about Phoenix, visit <http://www.nasa.gov/phoenix>.



NASA/JPL-Caltech/University of Arizona

NASA's Mars Phoenix Lander can be seen parachuting down to Mars in this image captured by the High Resolution Imaging Science Experiment camera on NASA's Mars Reconnaissance Orbiter.

Marshall employees selected for NASA Procurement awards

Three employees of the Marshall Center have been recognized by NASA for their service in Marshall's Office of Procurement.



Bryan Williford

Bryan Williford, procurement chief in the Solid Propulsion Support Office at Marshall, received the award for Procurement Supervisor of the Year. Kellie Craig, contract specialist in the Solid Propulsion Support Office, was named Contract Specialist of the Year. Eunice Rose, contract specialist intern in the Engineering Systems Support Office, was honored as Contracting Intern of the Year.

The awards reflect terms of service to NASA in 2007. Given annually by NASA, they distinguish the outstanding accomplishments of NASA civil service employees in various categories related to the procurement of contracts or partnerships between NASA and industry, academia and other government agencies.

"The Marshall Center has historically been a leader for North Alabama and the Tennessee Valley economic region," said Byron Butler acting director of the Marshall Center's Office of Procurement. "The Marshall Procurement team serves as a principle competitor within the NASA Procurement community and within the overall Federal acquisition workforce.

"These awards reflect that leadership and the dedication of these recipients and the whole procurement team," Butler said. "We are extremely proud of our recipients and honored to be a part of the work Marshall is doing on Ares that will take us back to the moon and lead us to further human exploration of space."

Williford, who began his NASA career at NASA Headquarters in Washington as a co-op in 1987, was responsible during the term for which he was honored for the Ares First Stage and J-2X engine contracts. Both are Ares Projects development efforts led by the

Marshall Center, spearheading NASA's creation of a next-generation launch vehicle fleet to replace the retiring space shuttles and launch explorers to the moon and beyond. Williford continues to support the Ares First Stage contract, as well as the Space Shuttle Reusable Solid Rocket Motor contract. Williford, a native of Durham, N.C., is a 1989 graduate of East Carolina University in Greenville, N.C.

Craig, a Huntsville native, also supports the Ares First Stage contract. She began her career as a contract specialist serving the Army Missile Command at Redstone Arsenal, before joining the Marshall Center in 2002. She is a graduate of Athens State University in Athens, Ala., where she earned a bachelor's degree in business administration in 1993.



Kellie Craig

Rose, a native of Gulfport, Miss., brings a diverse work experience background to the Engineering Systems Support Office, where she manages the Engineering & Science Contract Group, consisting of Jacobs Engineering and its industry partners supporting Marshall.



Eunice Rose

Rose's career began in the U.S. Army as a medical specialist in 1986. She later worked for State Farm Insurance in Dupont, Wash., as a commercial underwriter and taught high school in Tacoma, Wash. She earned a bachelor's degree in business administration in 1996 from the University of Minnesota Carlson School of Management in Minneapolis, Minn., and also holds a 2005 master's degree in public administration from Bowie State University in Bowie, Md. She joined NASA in 2005.

For more information about the Marshall Center's Office of Procurement, visit <http://ecprod.msfc.nasa.gov/msfc>.

Marshall employees to 'Take Our Children to Work' on June 4

The Marshall Center will hold its annual "Take Our Children to Work Day" on June 4 from 7 a.m. to 2 p.m.

This year's theme is "Making Choices for a Better World." Activities will include guided explorations of Marshall programs and facilities, science and propulsion demonstrations and tips on personal safety.

Retired NASA astronaut Owen Garriott of Huntsville and Oscar the Robot will welcome kids and parents with souvenirs and goody bags in the lobby of Building 4200 starting at 7 a.m. Audrey Robinson, director of the Office of Diversity & Equal

Opportunity at Marshall, will launch the day's events at 8 a.m. in Morris Auditorium.

Children in grades 3-12 are invited to participate. Registration for the event closes June 2. Shuttle buses will be available to transport children and parents to activities around the center.

For a roster of the day's planned activities, a shuttle bus schedule and other information, visit <http://eo/c2w/index.html>.

For more information, contact Abbie Johnson at 544-0014 or abbie.j.johnson@nasa.gov.

our understanding of the solar system and for continued human exploration of space."

After working as a scientist for Germany during World War II, the U.S. Army employed Stuhlinger in Texas and New Mexico and then in Huntsville in 1950, where he continued work on missile-related scientific projects. When parts of those laboratories were transferred to NASA in 1960, Stuhlinger moved to the new Marshall Center where he became director of the Space Sciences Laboratory. He was appointed associate director for science in 1968 and worked closely with Dr. Wernher von Braun, the first director of the Marshall Center.

Stuhlinger was a direct participant in the early planning for human lunar exploration and the Skylab Apollo Telescope Mount, which produced a wealth of new scientific information about the sun. He also did early planning on the High Energy Astronomy Observatories and contributed to the initial phases of the Hubble Space Telescope.

Stuhlinger called the first lunar landing a "dream come true." But he added, what von Braun wanted to do after the Apollo flights was to build the space station and plan a flight to Mars.

To read the transcript of an extended oral interview with Dr. Stuhlinger in 1999, go to "Inside Marshall."

Stuhlinger's own work included studies of electric propulsion for exploring Mars, comets, asteroids and other targets of the solar system. He also did early work involving scientific payloads for the space shuttle. He was a member of several noted scientific societies.

After his retirement from NASA in 1975, Stuhlinger joined the University of Alabama in Huntsville as adjunct professor where he taught astrophysics and space sciences. He also spent several months in Germany under the Alexander von Humboldt research award program. In 1984, he accepted a position as senior research associate at an aerospace firm in Huntsville.

Besides authoring more than 200 papers about space-related subjects, he co-authored, or edited several books on astronomical engineering, electric propulsion, ion propulsion, Skylab, Project Viking, von Braun and Mars.

Born Dec. 19, 1913, Stuhlinger was the son of a school teacher in a farming village in southern Germany. In 1922, his family moved to Tuebingen, Germany, where Stuhlinger attended high school and studied physics, mathematics and zoology, eventually receiving his doctorate in physics with a thesis on "Ionization Rate of Cosmic Rays" in 1936. He was appointed as an assistant professor of the Physics Department of the Berlin Institute of Technology and was a member of the faculty there from 1936 to 1941. He was an associate of Hans Geiger, inventor of the Geiger counter.

From 1939 until 1941, Stuhlinger was a member of a research group conducting studies in nuclear physics.

Two years later, he was drafted into the German Army. "I was a PFC in the German army, and I was marching toward the steppes of the Ukraine when an order reached me in early 1943 to come and join the Penemuende group." At Penemuende, Stuhlinger carried on research in guidance and control systems and assisted in the development of the V-2, a five-and-one-half-ton rocket that could travel 120 miles. "I saw for the first time what in future years I would see many times, and millions of people around the globe would see at rocket launchings."

In 1946, Stuhlinger came to the United States along with several other members of the von Braun team to work for the United States Army in Texas and New Mexico. There he helped von Braun's group develop, test and prepare scientific instrumentation for a series of V-2 rockets that the U.S. Army had recovered in Germany.

While at Fort Bliss, Texas, Stuhlinger also began studying electric space propulsion systems. In 1950, von Braun and his group moved to Huntsville, where the Army established the Ordnance Missile Laboratories. Under the auspices of von Braun, the team grew quickly, developing the Redstone, the Jupiter, and the Pershing missiles.

Stuhlinger became an American citizen on April 14, 1955. During those years, he worked on electric equipment, including magnetic and transistor amplifiers, and on special rocket instrumentation. He continued his studies of spaceflight missions with electrically charged spacecraft during several extended stays in West Germany. From 1956 until July 1, 1960, Stuhlinger was director of the Research Projects Laboratory, Army Ballistic Missile Agency for the U.S. Army Ordnance Missile Command at Redstone Arsenal.

On Jan. 31, 1958, the von Braun group launched Explorer I, America's first satellite. In Huntsville, Stuhlinger became chief of a laboratory for the development of control and measuring systems. He continued receiving recognition for his feasibility and design studies of electrical propulsion for space ships and was awarded the American Rocket Society's Propulsion Award soon after joining the Marshall Center in 1960.

Stuhlinger called von Braun "a very great influence, a very decided influence." In a 1999 interview he added, "I figured out the other day that I was present in about 1,500 meetings which he (von Braun) chaired, technical meetings some of them also going into questions of how to approach a project, how to get it through, to get it accepted, and how to approach other people to make them understanding and cooperative."

Wright is the Marshall Center historian.

Marshall's launch legacy on display in front of Building 4200



Team members from the Marshall Center's Logistics Services Office and the Engineering Directorate's Propulsion Systems Department brave drizzling rain to guide into place the second of three full-scale engines now on permanent display in front of Building 4200. The engines include the massive F-1 – the largest liquid-powered rocket engine ever to launch Americans to space, being lowered by workers onto a support pylon. To its left is a J-2 engine, the first liquid hydrogen-fueled American rocket engine, which along with the F-1 helped power the Saturn V rockets to space during the Apollo era. Waiting in the wings for its turn with the crane is a space shuttle main engine, the workhorse that has powered the shuttle fleet to orbit since 1981.

David Higginbotham/MSFC

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, June 5, is 4:30 p.m. Thursday, May 29.

Miscellaneous

KLH 120-watt speakers, brown speaker grills, oak colored cabinets, \$80. 541-0627

Two Ashley bar stools, metal legs/back, beige fabric seats, swivel, \$85. 859-9165.

Broyhill sleigh bed, chest, dresser, night stand, mohagany, paid \$1,500, 1 year old, \$900. 859-9165

Hide-a-bed couch and loveseat, camel back, medium blue, \$250. 830-9507

Refrigerator, self defrosting, icemaker option, \$50. 682-4154

Longerberger baskets, computer desk, curios. 777-3782

New electric/battery breast pump with attachments, 100 breast milk bags, cream, 60 disposable pads, \$100. 837-5571

Kenmore 22-cubic-foot refrigerator with icemaker, \$125; cherry executive office desk, approximately 32x60, \$150. 603-1031

Yanmar 1301 compact diesel tractor with 4 foot PTO-driven finish mower and tiller, \$3,100. 325-2919

AKC lab puppies available June 10, yellow, chocolate, black, males and females. 233-5620

Wii console with several games, controller adapters, SD card, \$330. 417-4828

John Deere bagger, fits Series 100 riding lawnmower, 48-inch deck, \$275. 353-6635

1987 F150 John Deer, green, needs motor, make offer. 679-8499

Dark pine, cannonball queen bed, \$150; green sofa, love seat, \$150. 544-1248

Wedding dress and veil, creme color, size 8-10, \$150. 880-9025

King-size mattress/boxsprings/bedrails, all bedding, comforter, shams, sheets, etc. taupe, \$400. 859-9165

Wurlitzer Spinnet piano, \$550. 426-0427

Evenflo high chair, Peter Rabbit crib set with matching diaper bag, Little People garage. 882-9044

Computer armoire, Hooker furniture, cherry wood, pullout drawers, approximately 5 feet high, \$225. 603-1643

Graco infant car seat/carrier \$30; Graco Sit n' Stand double infant stroller, \$75.00. (931) 993-1992

Vehicles

2006 Lexus IS250, 4-door sedan, leather, sport package, 12k miles, 2.5L V6, \$28,000 obo. 519-9326

2006 Honda CRF230F dirt bike, \$2,150. 776-4741

2003 Jaguar XJ8 Sovereign, black on tan, loaded, \$16,999. 797-8895

2003 Jeep Cherokee Laredo, 2WD, 59k miles, \$11,000. 655-6701

2002 Chevy Suburban LT K1500-4WD, 2nd row buckets, gray with gray leather, 141k miles, \$12,900. 656-0043

2001 Mazda Miata MA-5, red body, black top, 72k miles, \$10,500. 881-0520

2000 Triumph Sprint ST with luggage and extras, needs nothing, 19k miles. \$4,100. 650-5305

2000 Expedition XLT, 2WD, white, loaded, 101k miles, \$7,000 obo. 534-5044

1999 Toyota 4Runner Limited Edition, white, brown interior, sunroof, CD, A/C, \$7,000. 694-1260

1995 Chevy Tahoe, 162k miles, new tires, AM/FM CD player with iPod jack, subwoofer amplifier, \$4500. 603-0344

1994 Mitsubishi Montero LS, 4WD, 160k miles, runs, \$2,000 obo. 239-1874

1992 Ford Explorer, green, \$2,400. 939-389-4869

1992 Honda Accord EX, 5 speed, 275k miles, damage to front left and hood, \$750. (931) 703-5956

1992 Buick Riviera, white with red leather, 86k miles, VIPER alarm, new speakers, \$2,900. 520-3740

Chevy 2500, 3 door, short bed, 5 speed, metallic blue, aluminum wheels, 94k miles, \$8500. 572-4904

Wanted

Ride from Muscle Shoals area, schedule flexible, 436-1106

Carpool from Athens to 4200 area, tour of duty flexible between 7:30 a.m. - 8:30 a.m., Belinda, 874-0885

Remembering Marshall's Jenny Adams

By Luanne Kidd, Ares Projects, Program Planning & Control

Her name was Virginia Adams, but everyone called her Jenny. She worked with me as a program analyst in the Ares Projects Program Planning & Control Office. Last week, Jenny passed away very suddenly, and we all miss her.

Jenny served as a government employee for more than 35 years. She started her career at Wright-Patterson Air Force Base in her home state of Ohio where many of her family members still reside. When she got married and moved to Huntsville, she transferred to the Marshall Center where she started out as a secretary and moved up to the position of management assistant.



Jenny Adams

Over the years, she served in program development and in many different roles supporting various space transportation offices. "I worked closely with Jenny for 12 years," says Steve Cook, manager of the Ares Projects. "She was always sincere, conscientious and hard working, and she will be missed by the entire team. I know we all will keep her family in our thoughts and prayers during this difficult time."

In the past few days, Jenny has been in our thoughts, and many of her colleagues have talked about her unique qualities. One of her co-workers, Janice Jones, told me, "She knew everyone and where everything was. Everybody in the building went to her for something."

As a program analyst working with my office, many of her tasks involved contracts and budgets. Another one of our team members, Janet Crawford, told me, "She was a stickler for detail and tracked

every penny as if it were her own."

If I had a hot action item, Jenny often helped out. She was sensitive to other people's needs and feelings, and even under pressure, she always had a smile. Jenny was someone who could not stay still and went way beyond her designated job duties. She helped establish policies and procedures for the Ares Projects. She loved NASA, and one of her proudest moments was receiving the Space Flight Awareness Honoree award and taking her mother to see a space shuttle launch.

When not at work, Jenny loved to be outside exercising or gardening. She raised herbs and flowers, especially roses, and many people at Marshall have plants in their gardens that Jenny gave them. She loved exercise and often walked to the grocery store instead of driving. However, on her 50th birthday Jenny's girlfriends gave her a special ride in a limousine, something she had always wanted to try.

Jenny often talked about her son Nicholas, who is finishing up his first year at the University of South Alabama in Mobile, where he is majoring in marine biology. Jones says, "She was a proud mother."

Although Nicholas didn't often see his mother at work, he can be proud of her. While we sometimes focus on the hardware and the testing, the smoke and fire, and the more visible aspects of building a rocket, it takes many people doing a variety of jobs to make spaceflight a reality. I think it is important that we always remember the people behind the rockets. Human spaceflight is not inexpensive nor can the cost be taken lightly. Jenny knew this, and day in and day out, she calculated the costs and helped our team keep the Ares Projects on track.

Moving toward NASA's 50th anniversary ...

Forty seven years ago on May 25, 1961, President John F. Kennedy issued his famous challenge: "I believe this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely

to Earth..." Under that direction, NASA began plans to launch a human to the lunar surface.

The Marshall Center's key role involved providing the Saturn rocket for the Apollo 11 mission in 1969.

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